

EXECUTIVE SUMMARY 2005

# MONTANA'S COMPREHENSIVE FISH & WILDLIFE CONSERVATION STRATEGY



MONTANA FISH, WILDLIFE & PARKS

# MONTANA'S COMPREHENSIVE FISH & WILDLIFE CONSERVATION STRATEGY

PUBLISHED BY  
MONTANA FISH, WILDLIFE & PARKS

TABLE OF CONTENTS

ATTENTION:

This document should be cited as *Montana’s Comprehensive Fish and Wildlife Conservation Strategy, Executive Summary, 2005*. Montana Fish, Wildlife & Parks, 1420 East Sixth Avenue, Helena, MT 59620.

Citations, methodology, and details of analysis can be found in the complete document located on the CD attached to the inside back page of this document.

NOTE: This document is the executive summary of the complete Montana Comprehensive Fish and Wildlife Conservation Strategy. The information provided within is intended to summarize information found in the complete strategy, emphasizing greatest conservation needs in Montana. The complete document can be found on the enclosed CD or by visiting the Montana Fish, Wildlife and Parks website at [fwp.mt.gov](http://fwp.mt.gov)

List of Credits

Steering Committee

- Chris Smith, Chief of Staff, Co-Chair
- Larry Peterman, Chief of Field Operations, Co-Chair
- Mike Aderhold, Regional Supervisor
- Pat Gunderson, Regional Supervisor
- Ron Aasheim, Communication and Education Division Administrator
- Don Childress, Wildlife Division Administrator
- Chris Hunter, Fisheries Division Administrator

Technical Committee

- Adam Brooks, Federal Assistance Coordinator
- Rebecca Cooper, Federal Assistance Specialist
- Janet Hess-Herbert, Information Management Unit Leader
- Jeff Herbert, Wildlife Division Assistant Administrator
- Ken McDonald, Fisheries Management Bureau Chief
- Tom Palmer, Information Bureau Chief
- Jennifer Pelej, CFWCS Information Specialist
- Brad Schmitz, Regional Fisheries Manager
- T.O. Smith, Fish and Wildlife Conservation Planning Coordinator
- Graham Taylor, Regional Wildlife Manager
- Jim Williams, Regional Wildlife Manager
- Heidi Youmans, Nongame Bureau Chief

Planning Team

- T.O. Smith, Fish and Wildlife Conservation Planning Coordinator
- Steve Carson, Fish and Wildlife Data Manager
- Andrew Jakes, Wildlife Information Specialist/Biologist
- Adam Messer, Wildlife Information Specialist/GIS Data Analyst
- Jennifer Pelej, CFWCS Information Specialist

Executive Summary Design

Michelle Stevens-Orton, Bozeman, MT

Governor’s Message ..... i

Foreword..... 1

Introduction.....2

Component I: Ecotype Focus Areas of Greatest Conservation Need .....7

Tier One Focus Areas within Ecotypes .....8

Intermountain/Foothill Grassland Ecotype..... 10

    Terrestrial Conservation Focus Areas in Greatest Need (Tier I) ..... 10

        Bitterroot/Frenchtown Valleys (406,859 acres) ..... 10

        Central Montana Broad Valleys (2,604,058 acres)..... 11

        Deerlodge Valley (175,260 acres) ..... 12

        Flathead River Valley (1,586,787 acres) ..... 13

        Little Belt Foothills (839,541 acres) ..... 14

        North Tobacco Root Mountains and Foothills (224,989 acres) ..... 15

        Rocky Mountain Front Foothills (2,018,789 acres) ..... 16

        South Elkhorn Mountains (171,059 acres)..... 17

        Southwest Montana Intermontane Basins and Valleys (2,077,477 acres) ..... 18

        Upper Yellowstone Valley (178,039 acres) ..... 19

    Aquatic Conservation Focus Areas in Greatest Need (Tier I) ..... 20

        Big Hole River (153 River Miles) ..... 20

        Bitterroot River (84 River Miles) ..... 21

        Blackfoot River (127 River Miles)..... 22

        Jefferson River (77 River Miles) ..... 23

        Upper Yellowstone River (272 River Miles) ..... 24

Montane Forest Ecotype ..... 25

    Terrestrial Conservation Focus Areas in Greatest Need (Tier I) ..... 25

        Mission/Swan Valley and Mountains (679,663 acres)..... 25

    Aquatic Conservation Focus Areas in Greatest Need (Tier I) ..... 26

        Lower Clark Fork (149 River Miles)..... 26

        Middle Clark Fork (119 River Miles) ..... 27

Plains Grassland and Plains Forest Ecotype ..... 28

    Terrestrial Conservation Focus Areas in Greatest Need (Tier I) ..... 28

        Missouri Coteau (5,278,913 acres) ..... 28

        Montana Sedimentary Plains (13,828,142 acres) ..... 29

    Aquatic Conservation Focus Areas in Greatest Need (Tier I) ..... 30

        Lower Missouri River (175 River Miles)..... 30

        Lower Yellowstone River (278 River Miles)..... 31

        Powder River (220 River Miles)..... 32

        Tongue River (221 River Miles) ..... 33

Shrub Grassland Ecotype..... 34

    Terrestrial Conservation Focus Areas in Greatest Need (Tier I) ..... 34

        Bighorn Intermontane Basin (290,287 acres) ..... 34

        Montana Glaciated Plains (17,806,106 acres)..... 35

        Montana Shale Plains (2,403,965 acres) ..... 36

        Powder River Basin/Breaks/Scoria Hills (2,095,021 acres)..... 37

        Shale Scablands (417,176 acres)..... 38

    Aquatic Conservation Focus Areas in Greatest Need (Tier I) ..... 39

        Middle Missouri River (540 River Miles) ..... 39

TABLE OF CONTENTS

Component II: Community Types of Greatest Conservation Need .....41

Grassland Complexes (31,551,627 acres or 33.53% of Montana) .....42

Mixed Broadleaf Forests (883,498 acres or 0.94% of Montana) .....44

Mixed Shrub/Grass Associations (4,159,693 acres or 5.34% of Montana).....46

Riparian and Wetland (3,724,224 acres or 3.94% of Montana) .....48

Sagebrush and Salt Flats (5,625,886 acres or 5.97% of Montana).....50

Mountain Streams (59,364 Stream Miles in Montana) .....52

Prairie Streams (91,189 Stream Miles in Montana) .....54

Component III: Species of Greatest Conservation Need (Tier I Species) .....57

Invertebrates.....58

Mussels .....58

Western Pearlshell (*Margaritifera falcata*).....58

Vertebrates .....59

Fish .....59

White Sturgeon (Kootenai River Population) (*Acipenser transmontanus*).....59

Pallid Sturgeon (*Scaphirhynchus albus*) .....59

Paddlefish (*Polyodon spathula*).....59

Shortnose Gar (*Lepisosteus platostomus*).....60

Yellowstone Cutthroat Trout (*Oncorhynchus clarki bouvieri*).....60

Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*) .....60

Columbia Basin Redband Trout (*Oncorhynchus mykiss gairdneri*) .....61

Bull Trout (*Salvelinus confluentus*).....61

Lake Trout (native lakes) (*Salvelinus namaycush*) .....61

Arctic Grayling (*Thymallus arcticus*) .....62

Sturgeon Chub (*Hybopsis gelida*) .....62

Sicklefin Chub (*Hybopsis meeki*).....62

Pearl Dace (*Margariscus margarita*) .....63

Blue Sucker (*Cycleptus elongates*).....63

Trout-perch (*Percopsis omiscomaycus*).....63

Burbot (*Lota lota*) .....64

Sauger (*Stizostedion canadense*) .....64

Amphibians.....65

Coeur d’ Alene Salamander (*Plethodon idahoensis*) .....65

Western Toad (*Bufo boreas*).....65

Northern Leopard Frog (*Rana pipiens*).....65

Reptiles .....66

Snapping Turtle (*Chelydra serpentina*) .....66

Spiny Softshell (*Apalone spinifera*) .....66

Western Hog-nosed Snake (*Heterodon nasicus*) .....66

Milksnake (*Lampropeltis triangulum*) .....67

Smooth Greensnake (*Opheodrys vernalis*).....67

TABLE OF CONTENTS

Birds .....68

Common Loon (*Gavia immer*).....68

Trumpeter Swan (*Cygnus buccinator*).....68

Harlequin Duck (*Histrionicus histrionicus*) .....68

Bald Eagle (*Haliaeetus leucocephalus*) .....69

Greater Sage-Grouse (*Centrocercus urophasianus*).....69

Columbian Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*).....69

Yellow Rail (*Coturnicops noveboracensis*) .....70

Whooping Crane (*Grus americana*).....70

Piping Plover (*Charadrius melodus*).....70

Mountain Plover (*Charadrius montanus*) .....71

Long-billed Curlew (*Numenius americanus*).....71

Interior Least Tern (*Sterna antillarum athalassos*).....71

Black Tern (*Chlidonias niger*) .....72

Flammulated Owl (*Otus flameolus*).....72

Burrowing Owl (*Speotyto cunicularia*) .....72

Black-backed Woodpecker (*Picoides arcticus*).....73

Olive-sided Flycatcher (*Contopus cooperi*) .....73

Sedge Wren (*Cistothorus platensis*).....73

Nelson’s Sharp-tailed Sparrow (*Ammodramus nelsoni*).....74

Mammals.....75

Spotted Bat (*Euderma maculatum*) .....75

Townsend’s Big-eared Bat (*Corynorhinus townsendii*).....75

Pallid Bat (*Antrozous pallidus*).....75

Pygmy Rabbit (*Brachylagus idahoensis*) .....76

Hoary Marmot (*Marmota caligata*) .....76

Black-tailed Prairie Dog (*Cynomys ludovicianus*) .....76

White-tailed Prairie Dog (*Cynomys leucurus*).....77

Great Basin Pocket Mouse (*Perognathus parvus*) .....77

Northern Bog Lemming (*Synaptomys borealis*).....77

Meadow Jumping Mouse (*Zapus hudsonius*) .....78

Gray Wolf (*Canis lupus*) .....78

Grizzly Bear (*Ursus arctos horribilis*) .....78

Black-footed Ferret (*Mustela nigripes*).....79

Canada Lynx (*Felis Lynx*).....79

American Bison (*Bos bison*) .....79

Component IV: Greatest Inventory Needs .....81

Groups with Greatest Inventory Needs.....82

Species with Greatest Inventory Needs .....82

Photo Citations .....84

Literature Citations .....90

The Complete MT CFWCS CD .....91

# GOVERNOR'S MESSAGE

Montana's first Comprehensive Fish and Wildlife Conservation Strategy examines our diverse landscape so rich in fish and wildlife. It documents the wealth of healthy species and habitats in our great state, and points to areas where conservation efforts are needed to ensure we continue to have a healthy ecosystem with fewer threatened and endangered species.

Hunters and anglers have supported conservation of game species since the early 1900s. Now is the time for other conservationists to join in and help secure future funds for Montana-based conservation efforts. In short, all Montanans need to pitch in and work together to ensure the health of all species. This strategy is the first step in that important direction.

A cooperative and comprehensive approach to conservation will ensure that future generations of Montana families have the same quality hunting, fishing and wildlife viewing opportunities that we enjoy today.

Brian Schweitzer  
Governor

# FOREWORD

Montana, like other states, is rich in fish and wildlife but unfortunately not in the funds needed to address all species successfully.

Responding to the need for funding, Congress established the State Wildlife Grants (SWG) program in 2001. The funds support conservation projects for species historically overlooked because money's been short. To ensure that funds are used efficiently and effectively, Congress charged each state to develop a comprehensive assessment of its fish and wildlife and the places they inhabit.

This is Montana's contribution to the nationwide effort to take a broad look at America's fish and wildlife. It is our hope that this Comprehensive Fish and Wildlife Conservation Strategy (CFWCS) will bring Montana a step closer to securing long-term federal funding needed to conserve and manage hundreds of species that fall in the conservation gap between the state's major game animals and those that are threatened or endangered.

This document not only identifies Montana's critical wildlife habitats and the animals that need special attention, it aims to keep fish and wildlife management decisions in the hands of Montana citizens by keeping species from becoming threatened or endangered.

FWP hopes this comprehensive assessment will enable Montana to build on past successes and broaden the agency's ability to fulfill its mission to conserve all species.

Jeff Hagener  
Director  
Montana Fish, Wildlife & Parks

Comprehensive Strategy Goals

This comprehensive conservation strategy embraces all vertebrate species known to exist in Montana including both game and nongame species as well as some invertebrate species (freshwater mussels and crayfish). In the early years of fish and wildlife management, the focus was clearly placed on game animals and their related habits. This was, and continues to be, a result of almost all of the agency’s funding being provided by hunters and anglers. Although FWP has no intention of reducing the attention focused on important game species, it is apparent that effective conservation actions directed to particular community types will benefit a variety of game and nongame species. As a result, FWP believes that with this new funding mechanism and conservation strategy in place, managing fish and wildlife more comprehensively is a natural progression in the effective conservation of the remarkable fish and wildlife resources of Montana.

Although game species are included in the strategy, its priority is to describe those species and their related habitats in greatest conservation need. We interpreted “in greatest conservation need” to mean focus areas, community types and species that are significantly degraded or declining, federally listed, or where important distribution and occurrence information to assess the status of individuals and/or groups of species is lacking. Because management of game species has been largely successful over the last 100 years, most have populations that are stable or increasing and fewer were identified as in greatest conservation need (49 nongame, 11 game).

The methods and databases developed as part of this planning process are powerful tools that could be used in the future to help integrate other fish and wildlife management priorities as they are established. For this particular iteration of the strategy, the following goals were developed.

- Identify all of Montana’s fish and wildlife and related habitats in greatest need of conservation and meet all 8 requirements of WCRP and SWG
- Identify management strategies to conserve fish and wildlife and related habitats in greatest need
- Work independently and in partnership to conserve, enhance and protect Montana’s diverse fish and wildlife resources, and address each species equitably regardless of classification as game or nongame, rare or “at risk”
- Improve FWP’s ability to address present and future funding challenges and opportunities
- Integrate monitoring and management of game and nongame fish and wildlife species

The Four Components of Montana’s Strategy

Montana’s Comprehensive Fish and Wildlife Conservation Strategy is organized into four components. Component I, focus areas, guides attention to specific geographical areas of Montana that are in greatest need of conservation. Component II, community types, identifies habitats along with their related fish and wildlife that are in greatest need of conservation throughout Montana regardless of location. Often,

fish and wildlife within a community type face similar conservation concerns. Addressing these concerns using community level conservation allows many species to comprehensively benefit from conservation strategies. However, some species populations have declined so far, or are so specialized that conservation strategies aimed at focus areas or community types might not be effective. Therefore, Component III, identifies the 60 fish and wildlife species in greatest need of conservation. The conservation concerns for these species should be addressed specifically whether through broad or fine scale actions. Finally, there are many species and groups of species that we do not have available adequate occurrence data for in order to determine their status. Component IV provides a list of these species and groups of species that are in greatest need of inventory.

**Component I:** Geographic Focus Areas in the landscape that contain significant fish and wildlife communities (species and their associated habitats) that are identified as being in greatest need of conservation.

This is a strategy to focus resources and efforts toward geographical areas where they can benefit the largest number of species and communities in need of conservation

**Component II:** Fish and Wildlife Community Types that are in the greatest need of conservation.

This is a high leverage strategy to address the conservation concerns of whole ecological communities or species groupings. Implementing conservation strategies at this level will comprehensively benefit many fish and wildlife species.

**Component III:** Fish and Wildlife Species that are in the greatest need of conservation.

Species whose needs must be specifically addressed, whether through focus areas, community types or directly or indirectly

**Component IV:** Species and groups of species to be targeted for inventory.

Over time, this strategy will allow us to collect data 1) for species or species groups we do not have sufficient information to determine their level of conservation need, or 2) for species that are important or indicator species for health of certain communities, or 3) for species used as measures of success in a comprehensive approach to fish and wildlife management.

Categorizing the Levels of Conservation Need

Within each component, focus areas, community types, and species were prioritized into three or four tiers, based on their level of conservation need. Likewise, all species were prioritized for inventory needs using similar definitions. Please review the methods section of the strategy to understand how tiers were calculated for focus areas, communities, species, and inventory needs.

Tier I: Greatest conservation need. Montana Fish, Wildlife & Parks has a clear obligation to use its resources to implement conservation actions that provide direct benefit to these species, communities and focus areas.

Tier II: Moderate conservation need. Montana Fish, Wildlife & Parks could use its resources to implement conservation actions that provide direct benefit to these species, communities and focus areas.

Tier III: Lower conservation need. Although important to Montana’ wildlife diversity, these focus areas, communities and species are either abundant/widespread or are believed to have adequate conservation already in place.

Tier IV: Species that are non-native, incidental or on the periphery of their range and are either expanding or very common in adjacent states.

## How this Strategy Works

When fully implemented, this strategy is intended to be dynamic and is based on the concept that fine-scale information for any of Montana’ species will be used to continually refine and adjust the classification for that species when appropriate. This will be accomplished using the inventory component of the strategy. In turn, modifications to the list of species in greatest need of conservation should help re-direct priorities in terms of the most at risk community types. This information will then be used to direct our attention to new geographical areas of Montana and help focus the delivery of the appropriate conservation efforts that help address the most critical, where possible. We have made every effort to use existing management plans to describe the conservation concerns and strategies for focus areas, community types and species. In this way the strategy attempts to tie together many different plans at different levels in order to facilitate collaboration.

## Implementing Montana’s Comprehensive Conservation Strategy

Each of the focus areas, community types, species and inventory needs along with their conservation concerns and strategies are the conservation priorities for Montana. No conservation strategy identified in this document was singled out as more or less important than any other because successful conservation of these species and habitats in greatest need will require addressing all of these concerns over time. In addition singling out certain strategies at the strategic level reduces the flexibility of FWP and our partners to take advantage of conservation opportunities as they occur.

Several challenges must be met in order to successfully implement Montana’ strategy. First, this document was developed at the strategic level following congressional guidance. As a result, the conservation concerns and strategies that have been identified are intentionally broad in scope and will need to be further developed at the operational level as the strategy is implemented. Second, SWG funding is allocated annually and the amounts have so far been insufficient to fully implement the scope of this strategy. In addition, the unstable nature of funding serves as a roadblock that could prevent FWP and its partners from committing to long term projects. We anticipate that this funding status will remain the same in the near future.

These challenges will be met in several ways. Following the submission of Montana’s strategy to the USFWS, FWP and our partners will develop an Action Plan within the year that is operational in nature and that targets the Tier I focus areas, community types, species, and inventory needs that offer the greatest opportunity for leveraging our collective resources. These targets will be selected while considering the immediacy of conservation need and the limited and varying nature of SWG funding. The conservation targets that are selected will have an operational plan developed that details specific priorities, objectives, actions and responsibilities of FWP and our partners that will be accomplished prior to the next scheduled revision of the strategy. In this way, FWP and our partners can more realistically narrow the vast conservation needs of Montana’s habitats and species to more accurately reflect the available levels of SWG funding and ongoing conservation efforts that can be leveraged.

# MONTANA'S FOCUS AREAS

OF GREATEST CONSERVATION NEED

# MONTANA'S FOCUS AREAS

## OF GREATEST CONSERVATION NEED

Montana is divided into four ecotypes; Intermountain Grassland, Montane Forest, Plains Grassland and Forest, and Shrub Grassland. Within ecotypes, focus areas have been identified as geographic starting points for FWP and our partners to focus combined efforts on conserving Montana's community types and species in greatest need of conservation.

### ECOTYPES

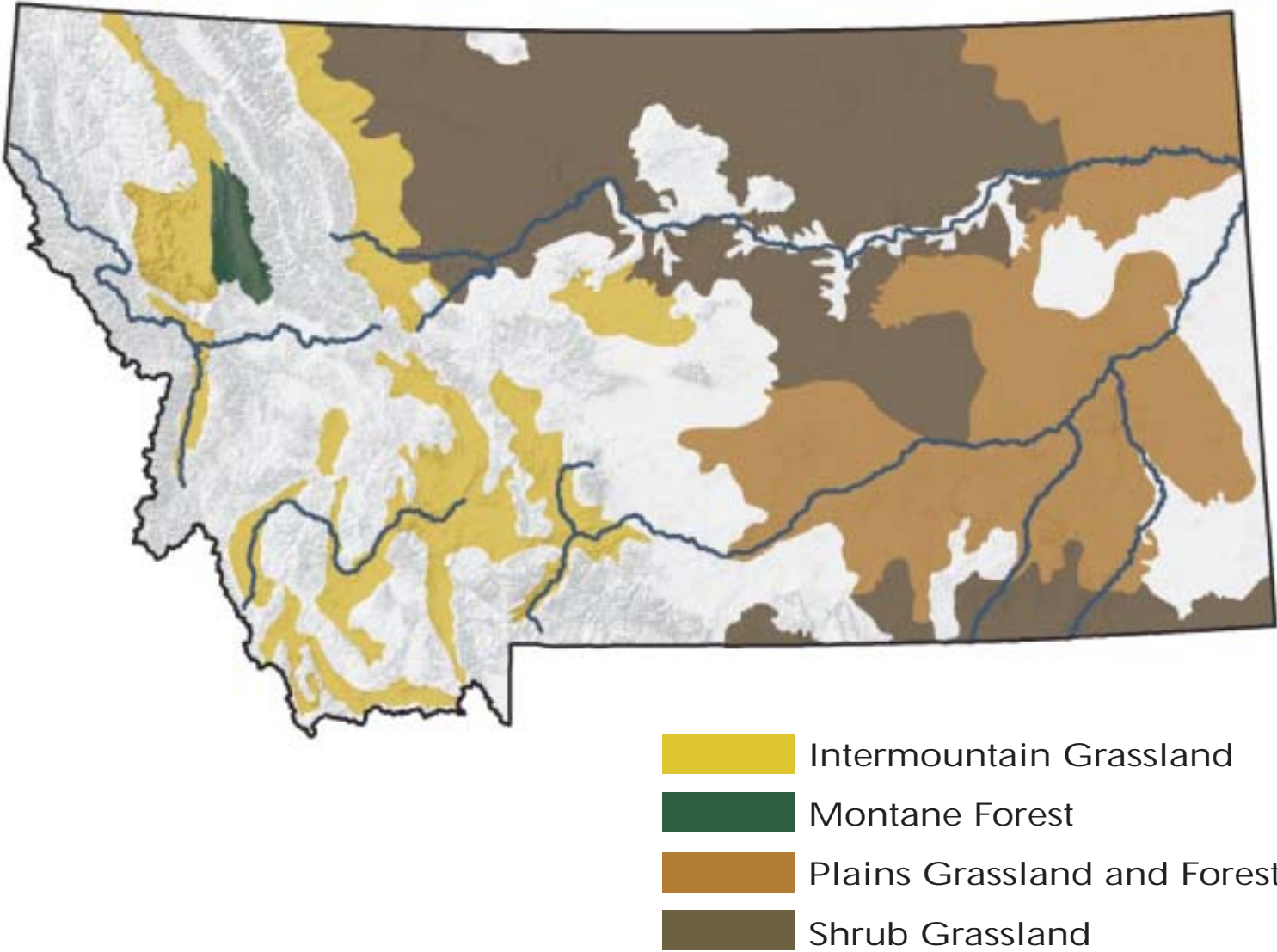
#### INTERMOUNTAIN GRASSLAND

The intermountain grassland ecotype represents the broad sweeping valleys of western Montana cradled by the peaks of the Rocky Mountains. The mosaic of mostly privately owned land extends from the Flathead River Valley in the north to the Centennial Valley in the south to the Little Belt Foothills in the east. These valleys, formed mainly by glaciers, represent some of Montana's most diverse habitat. They are often bisected by meandering river corridors that sustain core riparian and wetland areas and are sometimes dotted by glacial lakes. This ecosystem harbors more diverse communities of wildlife species than any other in Montana. The intermountain grassland ecotype contains some of the greatest concentrations of human population in Montana including Kalispell, Missoula, Helena, Bozeman and their surrounding areas. Addressing the challenges that accompany this interface between human settlement and fish and wildlife and their habitats will be critical to the conservation of this ecotype.

#### MONTANE FOREST

The montane forest ecotype represents the mountains of Montana that have been formed by tectonic uplift and glacial erosion. These high elevation areas occur along the western third of the state and encompass mountains from their base to their summit with elevations increasing from the north where the Kootenai River flows into Idaho (1,800 feet) southward to the snow capped peaks in the Beartooth Range (12,800 feet) adjacent to Yellowstone National Park. Vast coniferous forest complexes of larch, fir, hemlock, pine, and spruce trees characterize these areas that protect the headwater mountain streams of Montana's rivers. Much of this ecosystem is in public ownership through the United States Forest Service (USFS). Collaboration with the USFS will be critical to the conservation of this ecotype.

### TIER ONE TERRESTRIAL & AQUATIC FOCUS AREAS WITHIN ECOTYPES



#### PLAINS GRASSLAND AND FOREST

Montana's eastern grasslands are part of the Great Plains of North America that stretches from Canada south to Mexico and constitute about 50 percent of Montana, with about three-quarters of this being privately owned. The landscape is typically high, rolling land, with some scattered hills and wide river valleys including those of the warm water sections of the Yellowstone and Missouri rivers, which represent the most diverse communities of fish in Montana. The plains are characterized by a limited number of dominant grasses and xeric shrubs. This ecotype generally receives less than 15 inches of rain a year and endures days of winds in the blistering heat of summer and the blizzards and cold of winter. Woody draws, considered "ribbons of life", dot the landscape and render protection as an oasis for wildlife. In the southeast and north, are the unique badlands or "breaks" sculpted by wind and water. The prairie forests that occur as isolated mountain chains staggered just east from the Rocky Mountains are somewhat higher in elevation than the surrounding plains grassland, creating precipitation conditions favoring the establishment of a closed canopy forest. Great Plains ponderosa pine is the sole conifer forming the plains forests in combination with various hardwoods. Although these forests are not islands in the true sense, they are a unique part of the plains landscape.

#### SHRUB GRASSLAND

The shrub grassland ecotype occurs in widely separated segments across most of the eastern half of the state in high-elevation valleys and along non-forested slopes. The junipers and sagebrushes that characterize these generally dry slopes only make up 8 percent of Montana's land. They are interspersed with low cover grasslands and offer a unique transitional area habitat that supports many of Montana's species of greatest conservation need. Over half of this limited ecotype is privately owned. These benches have traditionally provided grazing lands but have in recent years become prized for residential development as they provide accessible sites with sweeping views. Working with landowners will be critical for the conservation of this ecotype.

Intermountain/Foothill Grassland

Intermountain/Foothill Grassland

Terrestrial Focus Areas

Terrestrial Focus Areas

Bitterroot/Frenchtown Valley

Central MT Broad Valleys

406,859 acres

2,604,058 acres

The Bitterroot/Frenchtown Valley is dominated by the jagged peaks of the Bitterroot Range to the west and the lower Sapphire Mountains to the east. The valleys are arid, flat or gently rolling landscapes. While these valleys support many habitats, from grassland and riparian to forests and sagebrush, most of the area is now in



agricultural production. In the valley bottoms, the cottonwood riparian habitats are productive wildlife habitats and are home to a wide variety of birds, mammals, reptiles and amphibians. These valleys are also some of the most quickly growing areas in the state, with residential development booming.

These central valleys include the areas from Three Forks, where the Missouri River begins, north through the Helena Valley and White Sulfur Springs, generally east of the Belt Mountains. The valleys are situated among the foothills of the Rocky Mountains where precipitation is reduced by the rain shadow effect. Low and moderate



cover grasslands dominate the valley floors and the dry environment highlights the importance of the riparian areas along the Missouri, Smith and other rivers and streams. Higher elevations capture enough precipitation to support fir, spruce and pine forests.

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES

TIER ONE COMMUNITY TYPES

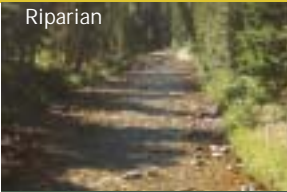
TIER ONE SPECIES



**AMPHIBIANS**  
Coeur d'Alene Salamander  
Western Toad  
Northern Leopard Frog

**BIRDS**  
Common Loon  
Trumpeter Swan  
Harlequin Duck  
Bald Eagle  
Long-billed Curlew  
Black Tern  
Flammulated Owl  
Black-backed Woodpecker  
Olive-sided Flycatcher

**MAMMALS**  
Townsend's Big-eared Bat  
Northern Bog Lemming  
Gray Wolf  
Grizzly Bear



CONSERVATION	
CONCERNS	STRATEGIES
HABITAT LOSS, DEGRADATION, AND FRAGMENTATION, especially as a result of human population growth and development of transportation infrastructure.	SUPPORT STRATEGIC CONSERVATION EASEMENTS BY conservation organizations & public agencies; Identify and prioritize key wildlife linkage areas, and work with other state and federal agencies, conservation groups, and landowners to restore wildlife connectivity; SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation; PROMOTE FURTHER DEVELOPMENT OF COUNTY ordinances that help guide future residential and commercial development.
INVASIVE AND EXOTIC PLANT AND ANIMAL SPECIES.	PARTICIPATE IN PARTNERSHIPS TO DEVELOP AND implement weed control strategies as well as invasive species management.
RANGE AND FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT & PRIVATE CONSERVATION activities that encourage and support sustainable land management practices.
STREAMSIDE RESIDENTIAL DEVELOPMENT.	DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT principles.

Grassland Complexes	25%
Sagebrush & Salt Flats	5%
Riparian & Wetland	4%

CONSERVATION

STRATEGIES

Grassland Complexes	48%
Sagebrush & Salt Flats	8%
Riparian & Wetland	5%

CONSERVATION

STRATEGIES

HABITAT LOSS, DEGRADATION, AND fragmentation, especially as a result of human population growth.

INVASIVE AND EXOTIC PLANT SPECIES.

RANGE OR FOREST MANAGEMENT PRACTICES.

STREAMSIDE RESIDENTIAL DEVELOPMENT.



CONSERVATION	
CONCERNS	STRATEGIES
HABITAT LOSS, DEGRADATION, AND fragmentation, especially as a result of human population growth.	SUPPORT STRATEGIC CONSERVATION EASEMENTS BY conservation organizations & public agencies; SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation; PROMOTE FURTHER DEVELOPMENT OF COUNTY ordinances that help guide future residential and commercial development; IDENTIFY AND PRIORITIZE KEY WILDLIFE LINKAGE areas, and work with other state and federal agencies, conservation groups and landowners to restore wildlife connectivity.
INVASIVE AND EXOTIC PLANT SPECIES.	PARTICIPATE IN PARTNERSHIPS TO DEVELOP AND implement weed control strategies.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices (example: rest and rotation schedules).
STREAMSIDE RESIDENTIAL DEVELOPMENT.	DEVELOP STATEWIDE RIPARIAN BEST management principles.

**AMPHIBIANS**  
Western Toad  
Northern Leopard Frog

**BIRDS**  
Common Loon  
Bald Eagle  
Greater Sage-Grouse  
Mountain Plover  
Long-billed Curlew  
Black Tern  
Burrowing Owl

**MAMMALS**  
Townsend's Big-eared Bat  
Pallid Bat  
Black-tailed Prairie Dog  
Grizzly Bear  
Canada Lynx



Intermountain/Foothill Grassland

Intermountain/Foothill Grassland

Terrestrial Focus Areas

Terrestrial Focus Areas

Deerlodge Valley

Flathead River Valley

175,260 acres

1,586,787 acres

One of several broad, intermountain valleys located in southwestern Montana, the north-flowing Clark Fork River bisects the Deerlodge Valley along an east-west axis. Cattle ranching and hay production



are the chief agricultural activities. Native bunchgrass occurs on the valley foothills, which provide important elk and deer winter range and supports other diverse non-game wildlife.

The glaciated Flathead Valley of northwestern Montana lies amongst majestic mountain ranges and cradles the Flathead River. The valley supports diverse wetland and aquatic communities including glacial lakes, ponds, spring creeks, riparian swamps, cottonwood forests, oxbow lakes, and Flathead Lake, the nation's largest



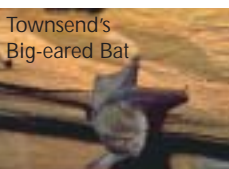
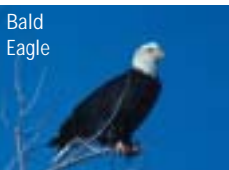
natural freshwater lake west of the Mississippi. The northern and southern reaches of the valley still support intact palouse prairie habitats interspersed with wetlands and forest. The rich resources of the valley floor—the riparian/wetlands, grasslands, and foothills—are primarily in private ownership, and are under extreme development pressure.

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES

TIER ONE COMMUNITY TYPES

TIER ONE SPECIES



**AMPHIBIANS**  
Western Toad  
Northern Leopard Frog

**BIRDS**  
Common Loon  
Trumpeter Swan  
Harlequin Duck  
Bald Eagle  
Long-billed Curlew  
Black Tern

**MAMMALS**  
Townsend's Big-eared Bat  
Canada Lynx



Mixed Shrub/Grass Associations

Grassland Complexes	59%
Riparian & Wetland	6%
Mixed Shrub/Grass Associations	5%
Sagebrush & Salt Flats	5%

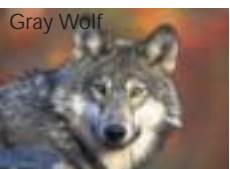
CONSERVATION	
CONCERNS	STRATEGIES
HABITAT LOSS, DEGRADATION & FRAGMENTATION, especially as a result of human population growth.	SUPPORT CONSERVATION EASEMENTS BY conservation organizations or public agencies; SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation; PROMOTE FURTHER DEVELOPMENT OF county ordinances that help plan for and manage development.
INVASIVE AND EXOTIC PLANT SPECIES.	PARTICIPATE IN PARTNERSHIPS TO DEVELOP and implement weed control strategies.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE conservation activities that encourage and support sustainable land management practices (example: rest and rotation schedules).
STREAMSIDE RESIDENTIAL DEVELOPMENT.	DEVELOP STATEWIDE RIPARIAN BEST management principles.

Grassland Complexes	16%
Sagebrush & Salt Flats	7%
Riparian & Wetland	3%



Wetland

CONSERVATION	
CONCERNS	STRATEGIES
HABITAT FRAGMENTATION, ESPECIALLY AS A result of human population growth/ development and expansion of the transportation network.	SUPPORT CONSERVATION EASEMENTS AND other methods that help protect critical habitat on private lands, including corporate forested lands; WORK WITH MONTANA DEPARTMENT OF Transportation and Federal Highway Commission to effectively mitigate impacts of highway construction; IDENTIFY AND PRIORITIZE KEY WILDLIFE linkage areas, and work with cooperators and landowners to restore wildlife connectivity.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT COOPERATIVE ACTIVITIES THAT encourage and support sustainable land management practices (example: rest and rotation schedules).
INVASIVE OR EXOTIC PLANT SPECIES.	SUPPORT EFFORTS TO ERADICATE EXOTIC OR invasive plant species.
ALTERED FIRE REGIMES.	WORK WITH COOPERATORS TO MIMIC natural fire regimes.



**AMPHIBIANS**  
Western Toad  
Northern Leopard Frog

**BIRDS**  
Common Loon  
Trumpeter Swan  
Bald Eagle  
Columbia Sharp-tailed Grouse  
Long-billed Curlew  
Black Tern  
Flammulated Owl  
Black-backed Woodpecker  
Olive-sided Flycatcher

**MAMMALS**  
Townsend's Big-eared Bat  
Northern Bog Lemming  
Grizzly Bear  
Gray Wolf  
Canada Lynx

Intermountain/Foothill Grassland

Intermountain/Foothill Grassland

Terrestrial Focus Areas

Terrestrial Focus Areas

Little Belt Foothills

Northern Tobacco Root Mountains & Foothills

839,541 acres

224,989 acres

The Little Belt Foothills cover the Judith Basin, a large grassland rimmed by the Little Belt, Highwood, Moccasin and Big Snowy mountains. The Judith River, tributary to the Missouri River, is the basin's main drainage. Large, flat benches that give soaring views define the high Little Belt foothills. Long, sprawling terraces dominate the



lower elevations. While about 30 percent of the benches and terraces in the Judith Basin are farmed, the remaining land consists of bunchgrass and sagebrush grasslands.

The rugged peaks of the Tobacco Root Mountains overlook this area with their abundant high mountain lakes providing excellent fishing opportunities. These mountains have seen extensive historical mining activity resulting in numerous roads. The foothills provide important elk and mule deer winter range



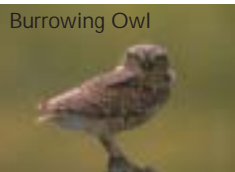
and are dominated by sagebrush/grassland that has seen conversion from spraying and burning of sagebrush. There are productive cottonwood riparian habitats supporting an abundance of wildlife species along the Jefferson River. This valley bottom is home to extensive agricultural production of cattle and alfalfa with little or no grain production.

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES

TIER ONE COMMUNITY TYPES

TIER ONE SPECIES

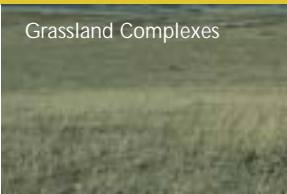


**AMPHIBIANS**  
Western Toad  
Northern Leopard Frog

**REPTILES**  
Western Hog-nosed Snake  
Milksnake

**BIRDS**  
Bald Eagle  
Greater Sage-Grouse  
Mountain Plover  
Long-billed Curlew  
Black Tern  
Burrowing Owl

**MAMMALS**  
Townsend's Big-eared Bat  
Black-tailed Prairie Dog  
Black-footed Ferret



Grassland Complexes	31%
Riparian & Wetland	7%
Sagebrush & Salt Flats	5%

CONSERVATION	
CONCERNS	STRATEGIES
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices (example: rest and rotation schedules).
STREAMSIDE RESIDENTIAL DEVELOPMENT.	DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT principles.
FRAGMENTATION AND LOSS OF NATIVE habitat as a result of conversion to cropland and human population growth development.	DEVELOP GOVERNMENT & PRIVATE CONSERVATION programs/activities that encourage and support private land stewardship; IDENTIFY AND PRIORITIZE KEY WILDLIFE linkage areas, and work with cooperators and landowners to restore wildlife connectivity.
ALTERED NATURAL FIRE REGIME.	WORK WITH PUBLIC AND PRIVATE EFFORTS TO restore natural fire regime to area.
INVASIVE OR EXOTIC PLANT SPECIES.	DEVELOP COOPERATIVE EFFORTS TO REDUCE the abundance of invasive or exotic species.

Grassland Complexes	48%
Sagebrush & Salt Flats	8%
Riparian & Wetland	5%



HABITAT LOSS, DEGRADATION & FRAGMENTATION, especially as a result of population growth/development.

INVASIVE OR EXOTIC PLANT SPECIES.

RANGE OR FOREST MANAGEMENT PRACTICES.

STREAMSIDE RESIDENTIAL DEVELOPMENT.

Grassland Complexes	48%
Sagebrush & Salt Flats	8%
Riparian & Wetland	5%

SUPPORT STRATEGIC CONSERVATION EASEMENTS, protection by conservation organizations or public agencies by providing advice and technical assistance;  
PROMOTE AND FURTHER DEVELOP COUNTY ordinances to manage development;  
SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation;  
IDENTIFY AND PRIORITIZE KEY WILDLIFE linkage areas, and work with other state and federal agencies, conservation groups, and landowners to restore wildlife connectivity.

PARTICIPATE IN PARTNERSHIPS TO DEVELOP and implement weed control strategies.

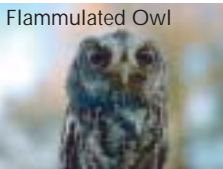
SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices.

DEVELOP STATEWIDE RIPARIAN BEST management principles

**AMPHIBIANS**  
Western Toad

**BIRDS**  
Flammulated Owl  
Bald Eagle

**MAMMALS**  
Townsend's Big-eared Bat  
Grizzly Bear  
Canada Lynx





Intermountain/Foothill Grassland

Intermountain/Foothill Grassland

Terrestrial Focus Areas

Terrestrial Focus Areas



Rocky Mountain Front Foothills

2,018,789 acres



South Elkhorn Mountains

171,059 acres

The Rocky Mountain Front from Alberta, Canada, south through Montana, marks the easternmost edge of the Bob Marshall Wilderness where thrust-faulted mountains give way to rolling foothills and Great Plains grasslands. This variable landscape still offers glimpses of grizzly bears moving from high-mountain fir and spruce forests to native prairie



grasslands dotted with pothole marshes where migrating birds stage season after season. With the exception of bison, all of the native mammals that inhabited this land when Lewis and Clark passed through still survive here.

The South Elkhorn Mountains are a diverse landscape with vegetation and topography more typical of Central Montana than the Intermountain Western portion of Montana. Sagebrush grasslands and broken and rough terrain are found through much of this area although much of the southern portion has been converted to dry-land grain



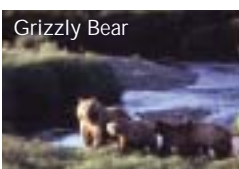
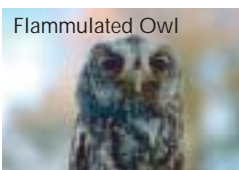
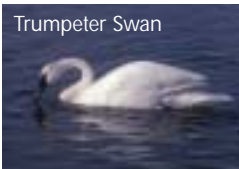
and Conservation Reserve Program grasslands. In the northern portion of this area, as the Elkhorn Mountains are approached, the common geologic formations are limestone ridges and outcrops. These ridges provide the environment for abundant stands of mountain mahogany and other xeric shrub types.

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES

TIER ONE COMMUNITY TYPES

TIER ONE SPECIES



**AMPHIBIANS**  
Western Toad  
Northern Leopard Frog

**REPTILES**  
Western Hog-nosed Snake

**BIRDS**  
Common Loon  
Trumpeter Swan  
Harlequin Duck  
Bald Eagle  
Piping Plover  
Mountain Plover  
Long-billed Curlew  
Black Tern  
Flammulated Owl  
Burrowing Owl

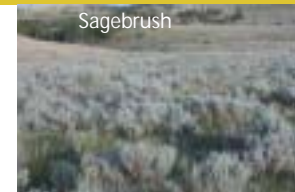
**MAMMALS**  
Townsend's Big-eared Bat  
Black-tailed Prairie Dog  
Northern Bog Lemming  
Grizzly Bear  
Canada Lynx



Grassland Complexes	60%
Riparian & Wetland	6%
Mixed Broadleaf Forest	2%

CONSERVATION	
CONCERNS	STRATEGIES
HABITAT FRAGMENTATION AS A RESULT of conversion of natural lands to agriculture and human population growth/development and energy exploration and development activities.	DEVELOP POLICY-BASED APPROACHES THAT encourage the conservation of natural communities rather than support their conversion; INCREASE EFFORTS TO MAINTAIN ECOLOGICAL features (e.g., black-tailed prairie dog colonies) or processes (e.g., fire) on public lands as they disappear from private lands; PROMOTE FURTHER DEVELOPMENT OF county ordinances that help guide future residential and commercial development; IDENTIFY AND PRIORITIZE KEY WILDLIFE linkage areas, and work with other state and federal agencies, conservation groups, and landowners to restore wildlife connectivity.
INVASIVE OR EXOTIC PLANT SPECIES.	SUPPORT COOPERATIVE EFFORTS TO ERADICATE or reduce the abundance of exotic or invasive plant species.

CONSERVATION	
CONCERNS	STRATEGIES
HABITAT LOSS, DEGRADATION, AND fragmentation, especially as a result of human population growth	SUPPORT STRATEGIC CONSERVATION easements/protection by conservation organizations or public agencies by providing advice and technical assistance; SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation; PROMOTE AND FURTHER DEVELOP COUNTY ordinances that help plan for and manage development; SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE conservation activities that encourage and support sustainable land management practices (example: rest and rotation schedules).
STREAMSIDE RESIDENTIAL DEVELOPMENT	DEVELOP STATEWIDE RIPARIAN BEST management principles.
INVASIVE OR EXOTIC PLANT SPECIES	PARTICIPATE IN PARTNERSHIPS TO DEVELOP and implement weed control strategies.

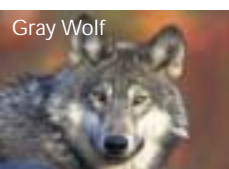
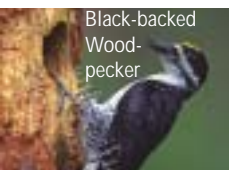
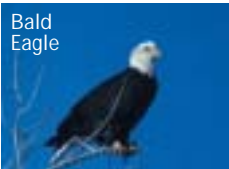


Grassland Complexes	43%
Sagebrush & Salt Flats	22%

**AMPHIBIANS**  
Northern Leopard Frog

**BIRDS**  
Bald Eagle  
Black-backed Woodpecker

**MAMMALS**  
Townsend's Big-eared Bat  
Pallid Bat  
Gray Wolf  
Canada Lynx



Terrestrial Focus Areas

Terrestrial Focus Areas

Southwest Montana  
Intermountain Basins & Valleys

2,077,477 acres

Upper Yellowstone Valley

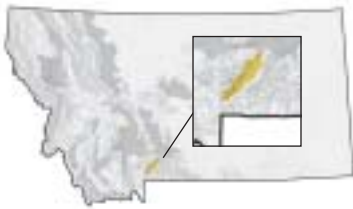
17,039 acres

The area consists of valleys located between mountain ranges, and typically follows major stream courses. Many small tributary mountain streams flow down the hillsides of these valleys and support wetlands and rivers such as the Red Rock, Madison, Jefferson and Big Hole rivers, and Red Rock Lakes. The vegetation is a mix of sagebrush



grassland on the valley floor and riparian species like sedges and willows are common in the wet valley bottoms. Coniferous forest and aspen stands in the wetter microsites dominate the higher elevations. These intermountain basins and valleys are under the imminent threat of habitat fragmentation from residential development.

The Upper Yellowstone River Valley, south of Livingston, is better known to many as Paradise Valley. Bracketed by the Absaroka-Beartooth Wilderness on the east and the Gallatin Range on the west, the valley's grassland habitats are bisected by the Yellowstone River and its riparian areas and



cottonwood stands. Cradled within the Gallatin and Absaroka ranges are low-elevation meadows, limited juniper stands mixed with grasslands and sagebrush. Higher up are forests of aspen, pine, spruce, subalpine fir, and whitebark pine.

TIER ONE SPECIES



AMPHIBIANS  
Western Toad

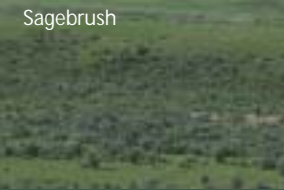
BIRDS

Common Loon  
Trumpeter Swan  
Bald Eagle  
Greater Sage-Grouse  
Long-billed Curlew  
Flammulated Owl

MAMMALS

Townsend's Big-eared Bat  
Pygmy Rabbit  
Great Basin Pocket Mouse  
Gray Wolf  
Grizzly Bear  
Canada Lynx

TIER ONE COMMUNITY TYPES



Grassland Complexes	37%
Sagebrush & Salt Flats	30%
Riparian & Wetland	7%

CONSERVATION

CONCERNS

HABITAT FRAGMENTATION AND LOSS OF connectivity as a result of human population growth/development.

INVASIVE OR EXOTIC PLANT SPECIES.

RANGE OR FOREST MANAGEMENT PRACTICES.

STREAMSIDE RESIDENTIAL DEVELOPMENT.

STRATEGIES

IDENTIFY AND PRIORITIZE KEY WILDLIFE LINKAGE areas and work with cooperators to restore wildlife connectivity;  
SUPPORT STRATEGIC CONSERVATION easements/protection by cooperators to provide advice/technical assistance;  
PARTICIPATE IN COOPERATIVE PROGRAMS/ activities that encourage and support private land stewardship;  
MANAGE FOR THE SUSTAINABLE USE OF recreational vehicles on public lands.

PARTICIPATE IN PARTNERSHIPS TO DEVELOP and implement weed control strategies.

SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices (example: rest and rotation schedules).

DEVELOP STATEWIDE RIPARIAN BEST management principles.

TIER ONE COMMUNITY TYPES

Grassland Complexes	42%
Sagebrush & Salt Flats	5%
Riparian & Wetland	5%
Mixed Broadleaf Forest	2%

CONSERVATION

CONCERNS

RECREATIONAL INFRASTRUCTURE DEVELOPMENT, especially road network development.

HABITAT LOSS AND FRAGMENTATION, especially as a result of human population growth/development.

INVASIVE OR EXOTIC PLANT SPECIES.

RANGE OR FOREST MANAGEMENT PRACTICES.

STREAMSIDE RESIDENTIAL DEVELOPMENT.



WORK WITH MONTANA DEPARTMENT OF Transportation and Federal Highway Commission to effectively mitigate impacts of highway construction.

SUPPORT STRATEGIC CONSERVATION easements/protection by conservation organizations or public agencies;  
SUPPORT STATE/FEDERAL TAX INCENTIVES THAT discourage habitat fragmentation;  
PROMOTE AND FURTHER DEVELOP COUNTY ORDINANCES that help plan for and manage development.

SUPPORT EFFORTS TO ERADICATE EXOTIC OR invasive plant species.

SUPPORT GOVERNMENT AND PRIVATE conservation activities that encourage and support sustainable land management practices (example: rest and rotation schedules).

DEVELOP STATEWIDE RIPARIAN BEST management principles.

TIER ONE SPECIES

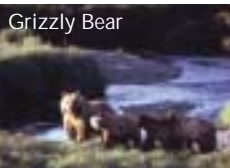
AMPHIBIANS  
Western Toad  
Northern Leopard Frog

BIRDS

Trumpeter Swan  
Bald Eagle  
Long-billed Curlew  
Black-backed Woodpecker

MAMMALS

Gray Wolf  
Grizzly Bear  
Canada Lynx





Intermountain/Foothill Grassland

Intermountain/Foothill Grassland

Aquatic Focus Areas

Aquatic Focus Areas



Big Hole River

Bitterroot River

153 river miles

84 river miles

Originally named the Wisdom River by Meriwether Lewis, the Big Hole River and its tributaries start along the border of Montana and Idaho. Surrounded by hay meadows, the upper Big Hole separates the Bitterroot Range on the west from the Pioneer Mountains to the east. The middle



section of the river runs through a length of gorge and then glides out through hay meadows, where it teams up with the Beaverhead River to create the Jefferson. It is one of the few places in the lower 48 where fluvial Arctic Grayling still persist.

This river originates in the Anaconda-Pintlar Wilderness and the Bitterroot Mountains in Montana. As the main tributaries flow together near Conner, Montana, it continues north along Highway 93 for 85 miles where it empties into the Clark Fork River near Missoula. To the west, is the glacial Bitterroot Range, and to the east



rises the smoother and drier Sapphire Mountains. The river is characterized by constantly shifting stream channels among extensive cottonwood and ponderosa pine bottomland. Adjacent to the Bitterroot River is “Travelers’ Rest” which marks the location of a centuries-old Native American campsite that Lewis and Clark’s used in 1805 and 1806.

TIER ONE SPECIES

TIER ONE SPECIES



INVERTEBRATES

Western Pearlshell

FISH

Westslope Cutthroat Trout  
Lake Trout (native lakes)

Arctic Grayling  
Burbot



INVERTEBRATES

Western Pearlshell

FISH

Westslope Cutthroat Trout  
Bull Trout



CONSERVATION:

CONCERNS

DIVERSION OF WATER FOR IRRIGATION DITCHES AND LIVESTOCK WATERING.

ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR OTHER water intakes.

RIPIARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).

CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.

ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.

INVASIVE OR EXOTIC PLANT SPECIES.

STRATEGIES

INCREASE INSTALLATION OF STOCKWATER WELLS IN PLACE OF IRRIGATION DITCHES.

SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.

SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas;  
DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.

REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE.

RESTORE STREAM CHANNELS, STREAMBANKS AND RIPARIAN AREAS TO A CONDITION that simulates their natural form and function.

IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES that restore essential habitats, simulate the natural hydrograph and also protect instream flow.

PARTICIPATE IN PARTNERSHIPS TO DEVELOP AND IMPLEMENT WEED CONTROL strategies as well as invasive species management

CONSERVATION:

CONCERNS

VALLEY FRAGMENTATION AS A RESULT OF HUMAN POPULATION GROWTH.

PRESENCE OF NON-NATIVE AQUATIC SPECIES INCLUDING WARMWATER FISHES, bullfrogs, crayfish, and milfoil.

WATER QUALITY PROBLEMS DUE TO MUNICIPAL DISCHARGE, IRRIGATION RETURN water, and other sources.

CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR OTHER water intakes.

MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.

RIPIARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).

STRATEGIES

PURSUE CONSERVATION EASEMENTS WITHIN THE VALLEY.

CONTROL EXOTIC SPECIES AND PROMOTE NATURAL HABITATS THAT SUPPORT native species but not exotic species.

WORK WITH MUNICIPAL GOVERNMENT AND PRIVATE LANDOWNERS TO REDUCE point source pollutants.

REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES BENEFICIAL FISH passage.

SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.

RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.

SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas;  
MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover;  
DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.



Intermountain/Foothill Grassland

Intermountain/Foothill Grassland

Aquatic Focus Areas

Aquatic Focus Areas



Blackfoot River

Jefferson River

127 river miles

77 river miles

The Blackfoot River begins at the junction of Beartrap and Anaconda Creeks near the Continental Divide and flows west 132 miles to its mouth at Bonner, Montana. Near its headwaters, the Blackfoot River drops through glaciated high-alpine meadows and runs between steep, forested slopes. For the last 52 miles, the Blackfoot levels



out and moves through open ranch and timbered areas until it meets the Clark Fork River near Bonner. A free-flowing river, the Blackfoot is affected by soon to be removed Milltown Dam, which has blocked fish passage on the Clark Fork River since 1907.

Lewis and Clark named this river after President Thomas Jefferson because it carried the greatest volume of water at that time compared to the near by Madison and Gallatin rivers. The Jefferson River begins where the Big Hole and Beaverhead intersect and flows north



through cattle country, limestone cliffs, and into the cottonwood bottoms near Three Forks, where it meets the Madison and Gallatin rivers to form the Missouri River. It is now one of the most heavily impacted rivers in Montana by irrigation and drought.

TIER ONE SPECIES

TIER ONE SPECIES



Western Pearlshell

INVERTEBRATES

Western Pearlshell

FISH

Westslope Cutthroat Trout  
Bull Trout



Bull Trout



Arctic Grayling

INVERTEBRATES

Western Pearlshell

FISH

Westslope Cutthroat Trout  
Arctic Grayling  
Burbot



Burbot

CONSERVATION:

CONCERNS

CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.

RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).

ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.

UNNATURAL HYDROGRAPH AND WATER TEMPERATURES ASSOCIATED WITH THE presence and operations of large dams, as well as blockage of migratory corridors (These alterations of the quantity or timing of stream flows cause unnatural flow fluctuations that diminish the quantity or quality of essential habitats.

WATER CHEMISTRY PROBLEMS THAT ARISE DUE TO HARD ROCK MINES IN HEADWATERS.

STRATEGIES

REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE FOR fluvial native fish, including the Milltown Dam.

RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.

SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas;  
MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover;  
DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.

SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.

IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES that restore essential habitats, simulate the natural hydrograph and also protect instream flows.

IMPLEMENT A COMPREHENSIVE MINE CLEANUP IN THE HEADWATERS OF THE Blackfoot River upstream of Lincoln, Montana.

CONSERVATION:

CONCERNS

CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS that fully or partially impede fish movement and reduce habitat connectivity.

MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.

RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).

ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.

ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS CAUSING dewatering, temperature change or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.

STRATEGIES

REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE.

RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.

SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas;  
MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover;  
DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.

SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.

IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES that restore essential habitats, help sustain lower temperatures, and simulate the natural hydrograph as well as protect instream flows.



Intermountain/Foothill Grassland



Montane Forest

Focus Areas

Focus Areas



Upper Yellowstone River & Tributaries

272 river miles



Mission/Swan Valley & Mountains

679,663 acres

The Yellowstone River originates in Wyoming and flows through Yellowstone National Park before entering Montana. The river continues in a northeasterly direction from Livingston and confluences with the Shields River, whose origination is the Crazy Mountains. The Yellowstone River then flows through eastern Montana until in eventually meets up with the



Missouri River just across the North Dakota border. The river has survived as one of the last large, free-flowing rivers in the continental United States. Lack of impoundments allows spring peak flows and fall & winter low flows to influence a unique and dynamic community through cottonwood-willow bottomlands and low cover grasslands.

This area is geologically similar to Glacier National Park, with the Swan Valley sandwiched in between the heavily glaciated ranges of the Mission and Swan Mountains. The mountain ranges and a strong Pacific storm track produce an inland maritime climate over a topography ranging from alpine ridges, cirque headwalls & basins down



to moraines and river bottoms. The valley bottom, in addition to the riparian areas along streams and rivers, is comprised of a wide array of wetlands such as fens/peatlands, marshes, vernal pools, ponds, and lakes with the area being comprised of more than 15 percent wetlands (compared to the Montana average of less than 2 percent wetland area).

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES



Yellowstone Cutthroat Trout

**FISH**  
Yellowstone Cutthroat Trout  
Burbot  
Sauger



Sauger

There are less than 2% Tier One Community Types in this Focus Area, however this area serves as a major corridor for Tier One Species.



**AMPHIBIANS**  
Western Toad



Western Toad

CONSERVATION: CONCERNS

- DEWATERING AS A RESULT OF WATER DIVERSION.
- WATER CHEMISTRY PROBLEMS DUE TO IRRIGATION RETURN WATER AND THE discharge of wastewater from coal bed methane operations, and other sources.
- RIPRAP AND OTHER STREAMBANK STABILIZATION WORK.
- INVASIVE NON-NATIVE FISH SPECIES.
- ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.
- RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).
- MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.
- ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.
- CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

STRATEGIES

- WORK WITH PUBLIC AND PRIVATE LANDOWNERS TO IMPROVE EFFICIENCY OF WATER use in order to maximize water return.
- SUPPORT COOPERATIVE EFFORTS TO MINIMIZE IMPACTS OF RETURN WATER DUE TO sedimentation, increased salinity and temperature alteration.
- WORK WITH NEW STABILIZATION PROJECTS TO REDUCE IMPACTS AND SUPPORT efforts to restore existing rip-rap areas to natural condition.
- IMPLEMENT PROGRAMS TO CONTROL EXOTIC SPECIES AND PROMOTE NATURAL habitats that support native species but not exotic species.
- SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER intakes in a manner that prevents entrainment of fishes.
- SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas.
- RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.
- IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES that restore essential habitats, simulate the natural hydrograph and also protect instream flows.
- REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE.

CONSERVATION

CONCERNS	STRATEGIES
HABITAT FRAGMENTATION AND LOSS OF connectivity, especially as a result of human population growth/development and related transportation network.	SUPPORT STRATEGIC CONSERVATION EASEMENTS BY conservation organizations and public agencies; IDENTIFY AND PRIORITIZE KEY WILDLIFE linkage areas, and work with other state and federal agencies, conservation groups, and landowners to restore wildlife connectivity; WORK WITH MONTANA DEPARTMENT OF Transportation and Federal Highway Commission to effectively mitigate impacts of highway construction.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices (example: rest and rotation schedules).
STREAMSIDE RESIDENTIAL DEVELOPMENT.	DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT principles.
INVASIVE OR EXOTIC PLANT SPECIES.	PARTICIPATE IN PARTNERSHIPS TO DEVELOP AND implement weed control strategies.
ALTERED FIRE REGIMES.	WORK WITH COORDINATING AGENCIES TO mimic natural fire regimes.

**BIRDS**  
Common Loon  
Trumpeter Swan  
Harlequin Duck  
Bald Eagle  
Flammulated Owl  
Black-backed Woodpecker  
Olive-sided Flycatcher

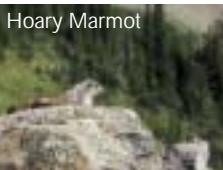


Common Loon



Olive-sided Flycatcher

**MAMMALS**  
Townsend's Big-eared Bat  
Hoary Marmot  
Northern Bog Lemming  
Gray Wolf  
Grizzly Bear  
Canada Lynx



Hoary Marmot



Northern Bog Lemming



Montane Forest

Montane Forest

Aquatic Focus Areas

Aquatic Focus Areas



Lower Clark Fork River

Middle Clark Fork River

149 river miles

119 river miles

The lower Clark Fork River originates at the confluence of the Clark Fork River and the Flathead River near the town of Paradise and continues to the Idaho Border. Where the lower Clark Fork River leaves Montana, it is the largest river in Montana based on mean annual discharge. Relatively wet and warm winter maritime conditions


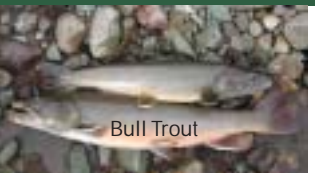

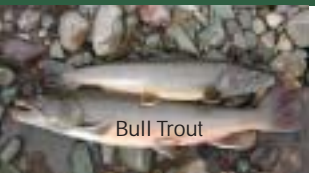


commonly lead to rain-on-snow events that significantly affect the hydrology of tributaries to the lower Clark Fork River by increasing the frequency of high flow. The mainstem Clark Fork River has been substantially altered by the construction of the Thompson Falls, Noxon Rapids, and Cabinet Gorge hydroelectric projects.

The Middle Clark Fork River extends about 115 river miles from Milltown Dam in Bonner, Montana, to its confluence with the Flathead River and is entirely free flowing. Its drainage is mountainous and covered with the large forested tracts of the Lolo National Forest and private



timberlands, broken by grazing and cropland areas in the lower valleys down to the Thompson Falls Dam. Because the middle Clark Fork receives the waters of the Blackfoot, Bitterroot and upper Clark Fork basins, it is known as a steady and productive system that supports a consistent fishery.

TIER ONE SPECIES		TIER ONE SPECIES					
	<b>FISH</b> Westslope Cutthroat Trout Bull Trout				<b>FISH</b> Westslope Cutthroat Trout Bull Trout		
CONSERVATION: CONCERNS		STRATEGIES		CONSERVATION: CONCERNS		STRATEGIES	
CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.		REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE TO ensure full migratory movement.		CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.		REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE TO ensure full migratory movement.	
MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.		RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.		MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.		RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.	
RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).		SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas; <b>MODIFY</b> RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover; <b>DEVELOP</b> STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.		RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).		SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas; <b>DEVELOP</b> STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.	
ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.		SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.		ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.		SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.	
UNNATURAL HYDROGRAPH AND WATER TEMPERATURES ASSOCIATED WITH THE presence and operations of large dams.		WORK WITH APPROPRIATE AUTHORITIES TO RESTORE HYDROGRAPH THAT MIMICS the natural regime.		ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.		IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES THAT restore essential habitats and simulate the natural hydrograph; <b>TO THE EXTENT FEASIBLE, OPERATE DAMS TO MIMIC A MORE NATURAL HYDROGRAPH</b> on the main channel of rivers and ensure a more natural thermal regime.	
NON-NATIVE FISH SPECIES.		SUPPORT ACTIVITIES TO PROMOTE NATURAL HABITATS THAT SUPPORT NATIVE species.		UNNATURAL HYDROGRAPH AND WATER TEMPERATURES ASSOCIATED WITH THE presence and operations of large dams.		WORK WITH APPROPRIATE AUTHORITIES TO RESTORE HYDROGRAPH THAT MIMICS the natural regime.	
MISIDENTIFICATION OF FISH SPECIES BY ANGLERS.		INCREASE EFFORTS TO EDUCATE ANGLERS ON THE IDENTIFICATION OF FISH SPECIES.		NON-NATIVE FISH SPECIES.		SUPPORT ACTIVITIES TO PROMOTE NATURAL HABITATS THAT SUPPORT NATIVE SPECIES.	
Page 26 • Executive Summary • 2005				2005 • Executive Summary • Page 27			

Terrestrial Focus Areas

Terrestrial Focus Areas

Missouri Coteau

Montana Sedimentary Plains

5,278,913 acres

13,828,142 acres

This area is part of the large continental prairie grassland and pothole habitat. In most years, springtime finds this area dotted with small wetlands. These shallow wetlands shine amongst the small glacial hilltops that are covered with short- to mid-grass prairie species. Sagebrush and other mixed vegetation are found in lower elevations and basins.



Several wildlife and vegetative species in this area are unique, including the newly discovered species for Montana, the northern short-tailed shrew. Additionally, the Missouri Coteau is one of the few portions of Montana that is considered to be part of this North American duck factory.

This vast, gently sloping to rolling area contains scattered buttes and badlands. It sits on heavy clay soils and consists of mostly dry shrub lands and mixed grass prairies. It receives very little precipitation and is interspersed with woody draws that contain ponderosa pine and



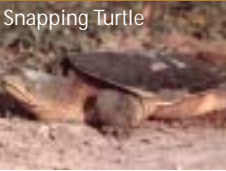
snowberry. Agricultural practices can be found throughout the area that also supports many dry-land native wildlife species such as antelope, mule deer and greater sage-grouse.

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES

TIER ONE COMMUNITY TYPES

TIER ONE SPECIES



- AMPHIBIANS**
  - Northern Leopard Frog
- REPTILES**
  - Snapping Turtle
  - Spiny Softshell
  - Western Hog-nosed Snake
  - Milksnake
  - Smooth Greensnake

- BIRDS**
  - Common Loon
  - Trumpeter Swan
  - Bald Eagle
  - Yellow Rail
  - Whooping Crane
  - Piping Plover
  - Long-billed Curlew
  - Interior Least Tern
  - Black Tern
  - Owl Burrowing
  - Sedge Wren
  - Nelson's Sharp-tailed Sparrow
- MAMMALS**
  - Meadow Jumping Mouse
  - Townsend's Big-eared Bat



- Grassland Complexes 32%
- Riparian & Wetland 6%

CONSERVATION	
CONCERNS	STRATEGIES
LOSS OF HABITAT DUE TO CONVERSION OF native prairie to small grain crops.	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT PUBLIC AND PRIVATE CONSERVATION programs/activities that encourage and support private land use stewardship; INCREASE COOPERATIVE EFFORTS TO MAINTAIN ecological features or processes on public, private, and tribal lands.
DRAINAGE OF NATURAL WETLANDS.	PARTICIPATE IN GOVERNMENT AND PRIVATE conservation partnerships to reduce the loss of wetland habitat and restore lost wetlands.
INVASIVE OR EXOTIC PLANT SPECIES.	COOPERATIVE EFFORTS TO REDUCE THE abundance of exotic plant species.
DISRUPTION OF NATURAL DISTURBANCE processes, especially fire.	WORK WITH OTHER AGENCIES, TRIBES AND private organizations to restore the natural disturbance processes.
FRAGMENTATION OF HABITAT DUE TO FOSSIL FUEL exploration and development activities.	WORK WITH CORPORATIONS, LAND OWNERS AND other agencies to reduce impacts of exploration.

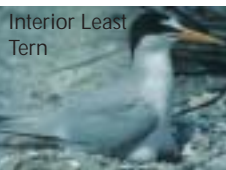
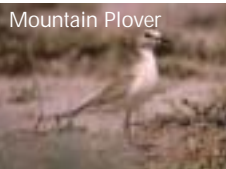


- Grassland Complexes 46%
- Mixed Shrub/Grass Associations 12%
- Sagebrush & Salt Flats 7%
- Riparian & Wetland 5%

CONSERVATION	
CONCERNS	STRATEGIES
LOSS OF HABITAT AS A RESULT OF CONVERSION OF native prairie to agriculture.	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT COOPERATIVE PROGRAMS/ACTIVITIES that encourage and support private land use stewardship.
FRAGMENTATION OF HABITAT DUE TO FOSSIL fuel exploration and development activities.	EDUCATE ON AND RESEARCH FOSSIL FUEL development and its impacts on natural landscape; WORK WITH CORPORATIONS, LAND OWNERS and other agencies to reduce impacts of exploration.
INVASIVE OR EXOTIC PLANT SPECIES.	DEVELOP COOPERATIVE EFFORTS TO REDUCE the abundance of exotic plant species.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices (example: rest and rotation schedules).
STREAMSIDE RESIDENTIAL DEVELOPMENT.	DEVELOP STATEWIDE RIPARIAN BEST management principles.

- AMPHIBIANS**
  - Northern Leopard Frog
- REPTILES**
  - Snapping Turtle
  - Spiny Softshell
  - Western Hog-nosed Snake
  - Milksnake

- BIRDS**
  - Common Loon
  - Trumpeter Swan
  - Bald Eagle
  - Greater Sage-Grouse
  - Whooping Crane
  - Mountain Plover
  - Long-billed Curlew
  - Interior Least Tern
  - Black Tern
  - Burrowing Owl
- MAMMALS**
  - Spotted Bat
  - Townsend's Big-eared Bat
  - Black-tailed Prairie Dog
  - Meadow Jumping Mouse
  - Black-footed Ferret
  - Canada Lynx
  - American Bison





Plains Grassland & Forest

Plains Grassland & Forest

Aquatic Focus Areas

Aquatic Focus Areas



Lower Missouri River

175 river miles



Lower Yellowstone River

278 river miles

The lower Missouri River is a land of badlands, breaks and coulees. This section of the river flows through windswept plains dotted with pothole lakes that fill with melting snow. The river runs approximately 180 river miles from Fort Peck Dam to the North Dakota border. The section of



river from the dam to the town of Wolf Point is uncharacteristically cool and clear, as water discharged from below the reservoir is devoid of sediment. From Wolf Point to the North Dakota border the Missouri remains warm, with warm water tributaries like the Poplar River, Red Water River and Big Muddy Creek.

The French called it “Roche Jaune,” meaning yellow rock, to describe the lower section of the Yellowstone that is lined with trees and meanders through yellow bluffs and rimrocks on its journey eastward. The area the river cuts through is a country of plateaus and wind-



carved sandstone. By the time the Yellowstone has reached the mouth of the Bighorn River it has turned from a crystal, cold mountain stream into a warm plains river. As it flows northeast it picks up strength from the Powder and Tongue rivers. In the lower Yellowstone you can find species like sauger, burbot and paddlefish.

TIER ONE SPECIES

TIER ONE SPECIES



Pallid Sturgeon

FISH		
Pallid Sturgeon	Sturgeon Chub	Blue Sucker
Paddlefish	Sicklefin Chub	Burbot
Shortnose Gar	Pearl Dace	Sauger



Shortnose Gar



Paddlefish

FISH		
Pallid Sturgeon	Sturgeon Chub	Blue Sucker
Paddlefish	Sicklefin Chub	Burbot
Shortnose Gar	Pearl Dace	Sauger



Sicklefin Chub

CONSERVATION:

CONCERNS

- CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.
- MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.
- RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).
- ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.
- ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.
- WATER CHEMISTRY PROBLEMS THAT ARISE DUE TO MUNICIPAL DISCHARGE, irrigation return water, and other sources.
- UNNATURAL HYDROGRAPH AND WATER TEMPERATURES ASSOCIATED WITH THE presence and operations of large dams.
- NON-NATIVE FISH SPECIES.

STRATEGIES

- REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE TO ensure full migratory movement.
- RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.
- SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas; MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover; DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.
- SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.
- IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES THAT restore essential habitats and simulate the natural hydrograph.
- WORK WITH MUNICIPAL GOVERNMENT AND PRIVATE LANDOWNERS TO REDUCE point source pollutants.
- WORK WITH APPROPRIATE AUTHORITIES TO RESTORE HYDROGRAPH THAT MIMICS the natural regime.
- SUPPORT ACTIVITIES TO PROMOTE NATURAL HABITATS THAT SUPPORT NATIVE SPECIES.

CONSERVATION:

CONCERNS

- DEWATERING AS A RESULT OF WATER DIVERSION.
- INVASIVE NON-NATIVE FISH SPECIES.
- ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.
- RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).
- ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.
- CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

STRATEGIES

- WORK WITH PUBLIC AND PRIVATE LAND OWNERS TO IMPROVE EFFICIENCY OF water use in order to maximize water return; PROTECT INSTREAM FLOW RESERVATIONS; DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.
- DEVELOP PROGRAMS TO CONTROL INVASIVE SPECIES AND PROMOTE NATURAL habitats that support native species.
- SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.
- SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas. MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover; DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.
- IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES that restore essential habitats, simulate the natural hydrograph and also protect instream flows.
- REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE.



Plains Grassland & Forest

Plains Grassland & Forest

Aquatic Focus Areas

Aquatic Focus Areas



Powder River

Tongue River

220 river miles

221 river miles

The Powder River is noted as being one mile wide and one inch deep. It cuts through an area that can be described as a complex maze of draws. A major spawning tributary for native fishes found in the Yellowstone system, the Powder River provides spawning and nursery habitat for sauger, shovelnose



sturgeon, channel catfish and many cyprinid minnow species. It is so named because of the gunpowder-colored sand on its banks, although the Indians and Lewis & Clark called the river “Red Stone” because of the color of rocks along its course.

The headwaters of the Tongue River rise in the Bighorn Mountains of Wyoming. From these sources the river flows northeast to its confluence with the Yellowstone River at Miles City. The 3,500-acre Tongue River Dam controls the river's flows in Montana. Above the reservoir, the river meanders through a broad open valley. Here its main features



are turbid water, slow velocity, muddy bottoms, and warm temperatures. Downstream from the dam, the river flows through a narrow canyon. With an increasing gradient, cooler water temperatures, and gravel bottoms, it slows back down through meandering valley streams to its confluence with the Yellowstone.

TIER ONE SPECIES

TIER ONE SPECIES



Sturgeon Chub

FISH  
Sturgeon Chub  
Burbot  
Sauger



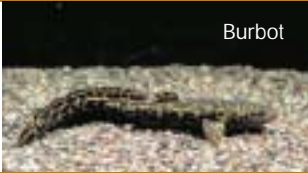
Sauger



Paddlefish

Paddlefish  
Sturgeon Chub  
Blue Sucker

FISH  
Burbot  
Sauger



Burbot

CONSERVATION:

CONCERNS

STRATEGIES

DEWATERING AS A RESULT OF WATER DIVERSION.

RIPRAP AND OTHER STREAMBANK STABILIZATION WORK.

INVASIVE NON-NATIVE FISH SPECIES.

ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.

MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.

ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.

CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

WORK WITH PUBLIC AND PRIVATE LAND OWNERS TO IMPROVE EFFICIENCY OF WATER use in order to maximize water return;  
PROTECT INSTREAM FLOW RESERVATIONS.

WORK WITH NEW STABILIZATION PROJECTS TO REDUCE IMPACTS AND SUPPORT efforts to restore existing rip-rap areas to natural condition;  
DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.

DEVELOP PROGRAMS TO CONTROL INVASIVE SPECIES AND PROMOTE NATURAL habitats that support native species.

SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.

RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function.  
MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover.

IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES THAT restore essential habitats, simulate the natural hydrograph and also protect instream flows

REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE.

CONSERVATION:

CONCERNS

DEWATERING AS A RESULT OF WATER DIVERSION.

WATER CHEMISTRY PROBLEMS DUE TO IRRIGATION RETURN WATER AND THE discharge of wastewater from coal bed methane operations, and other sources.

ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.

MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.

CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.

LOSS OF SPECIES (MOUNTAIN WHITEFISH AND MOUNTAIN SUCKER) BELOW TONGUE River Dam due to de-watering and drought.

STRATEGIES

WORK WITH PUBLIC AND PRIVATE LAND OWNERS TO IMPROVE EFFICIENCY OF water use in order to maximize water return;  
PROTECT INSTREAM FLOW RESERVATIONS.

SUPPORT COOPERATIVE EFFORTS TO MINIMIZE IMPACTS OF RETURN WATER DUE TO sedimentation, increased salinity and temperature alteration;  
STUDY WATERS ENTERING THE TONGUE RIVER AS A RESULT OF COAL BED METHANE development in both Montana and Wyoming.

SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.

RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function;  
MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover;  
DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.

REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE.

SUPPORT COOPERATIVE EFFORTS TO INCREASE WATER FLOW AND REDUCE BARRIERS to migration specifically affecting these species.

Shrub Grassland

Shrub Grassland

Terrestrial Focus Areas

Terrestrial Focus Areas

Bighorn Intermontane Basin

Montana Glaciated Plains

290,287 acres

17,806,106 acres

The Bighorn Basin is home to a very diverse wildlife community and represents a limited geographic area at the end of its range that resembles communities more typical of the Great Basin and Colorado Plateau than Montana. Riparian areas are limited to minor drainages. The Basin is the driest area in Montana, typically



receiving only 6 inches of precipitation annually. Snow seldom lasts due to the predominate and seemingly ever-present southwest winds. Native vegetation is generally dominated by black sagebrush, Wyoming big sagebrush, and greasewood. Understory grasses are generally sparse with invading annuals such as cheatgrass.

This area is dominated by level- to rolling- till plains covered by sagebrush grasslands and mixed short-grass prairie. It encompasses several island mountain ranges. In the east, this focus area is characterized by prairie dissected by the major tributaries to the Milk, Missouri, Marias,



and Musselshell River drainages. From the bluffs dotted with ancient teepee rings, one can observe the numerous prairie wildlife species. To the west, the area is characterized by the numerous rugged breaks supporting timber stands. This area is considered very fertile wheat-growing country.

TIER ONE SPECIES

TIER ONE COMMUNITY TYPES

TIER ONE COMMUNITY TYPES

TIER ONE SPECIES



**AMPHIBIANS**  
Northern Leopard Frog

**REPTILES**  
Western Hog-nosed Snake  
Milksnake

**BIRDS**  
Bald Eagle  
Greater Sage-Grouse  
Mountain Plover  
Long-billed Curlew  
Burrowing Owl

**MAMMALS**  
Spotted Bat  
Pallid Bat  
Black-tailed Prairie Dog  
White-tailed Prairie Dog  
Gray Wolf  
Black-footed Ferret



Sagebrush & Salt Flats 34%  
Grassland Complexes 31%  
Mixed Shrub/Grass Associations 6%

CONSERVATION		CONSERVATION	
CONCERNS	STRATEGIES	CONCERNS	STRATEGIES
LOSS OF HABITAT DUE TO CONVERSION agriculture.	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT PUBLIC AND PRIVATE CONSERVATION programs/activities that encourage and support private land use stewardship.	CONVERSION OF NATIVE PRAIRIE TO SMALL grain production.	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT COOPERATIVE PROGRAMS/ACTIVITIES that encourage and support private land and tribal land use stewardship; IMPLEMENT PRACTICES (ECONOMIC AND ecological) that sustain ranching profitability and promote public access.
DRAINAGE OF NATURAL WETLANDS.	PARTICIPATE IN GOVERNMENT AND PRIVATE conservation partnerships to reduce the loss of wetland habitat and restore lost wetlands.	PETROLEUM EXPLORATION AND DEVELOPMENT impacts.	WORK WITH CORPORATIONS, LAND OWNERS AND other agencies to reduce impacts of exploration; EDUCATE ON AND RESEARCH FOSSIL FUEL development and its impacts on natural landscape.
INVASIVE OR EXOTIC PLANT SPECIES.	IMPLEMENT COOPERATIVE EFFORTS TO REDUCE the abundance of exotic plant species.	INVASIVE OR EXOTIC PLANT SPECIES.	DEVELOP COOPERATIVE EFFORTS TO REDUCE the abundance of exotic plant species.
DISRUPTION OF NATURAL DISTURBANCE processes, especially fire.	WORK WITH OTHER AGENCIES, TRIBES AND private organizations to restore the natural disturbance processes.	LOSS OF NATURAL WETLANDS.	MAINTAIN EXISTING STRUCTURE AND functional uses of wetlands on private and federally managed lands.
FRAGMENTATION OF HABITAT DUE TO FOSSIL fuel exploration and development activities.	WORK WITH CORPORATIONS, LAND OWNERS and other agencies to reduce impacts of exploration; EDUCATE ON AND RESEARCH FOSSIL FUEL development and its impacts on natural landscape.		



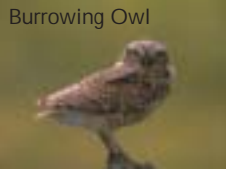
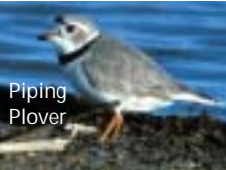
Grassland Complexes 42%  
Sagebrush & Salt Flats 5%  
Riparian & Wetland 3%

**AMPHIBIANS**  
Northern Leopard Frog

**REPTILES**  
Snapping Turtle  
Spiny Softshell  
Western Hog-nosed Snake  
Milksnake

**BIRDS**  
Common Loon  
Bald Eagle  
Greater Sage-Grouse  
Yellow Rail  
Whooping Crane  
Piping Plover  
Mountain Plover  
Long-billed Curlew  
Interior Least Tern  
Black Tern  
Burrowing Owl

**MAMMALS**  
Spotted Bat  
Townsend's Big-eared Bat  
Black-tailed Prairie Dog  
Black-footed Ferret  
Canada Lynx  
American Bison



Shrub Grassland

Shrub Grassland

Terrestrial Focus Areas

Terrestrial Focus Areas

Montana Shale Plains

2,403,965 acres

This area is mostly privately owned. It can be considered mountain foothill terrain that contains many woody draws with ponderosa pine and hardwood stands throughout. It is very dry with annual precipitation not exceeding 12



inches, on average. Unique species such as the milksnake and western hog-nosed snake can be found here.

Powder River Basin/  
Breaks/Scoria Hills

2,095,021 acres

Much of this unglaciated area extends across Montana's border into Wyoming. The flat to rolling, mixed-grass prairie contains considerable areas of sagebrush grassland as well as ponderosa



pine and juniper woodlands broken by occasional rugged breaks. The Powder River cuts through the area providing significant riparian habitat for many species.

TIER ONE SPECIES



- AMPHIBIANS**  
Northern Leopard Frog
- REPTILES**  
Spiny Softshell  
Western Hog-nosed Snake  
Milksnake
- BIRDS**  
Common Loon  
Bald Eagle  
Greater Sage-Grouse  
Whooping Crane  
Mountain Plover  
Long-billed Curlew  
Black Tern  
Burrowing Owl
- MAMMALS**  
Townsend's Big-eared Bat  
Black-tailed Prairie Dog  
Meadow Jumping Mouse  
Black-footed Ferret  
Canada Lynx  
American Bison

TIER ONE COMMUNITY TYPES



Grassland Complexes	47%
Mixed Shrub/Grass Associations	22%
Sagebrush & Salt Flats	8%
Riparian & Wetland	2%

CONSERVATION	
CONCERNS	STRATEGIES
INVASIVE OR EXOTIC PLANT SPECIES.	DEVELOP COOPERATIVE EFFORTS TO REDUCE the abundance of exotic plant species.
DISRUPTION OF NATURAL DISTURBANCE processes or fire regimes.	WORK WITH OTHER AGENCIES, TRIBES AND private organizations to restore the natural disturbance processes.
CONVERSION OF NATURAL HABITAT TO CROPLANDS.	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT PUBLIC AND PRIVATE CONSERVATION programs/activities that encourage and support private land use stewardship; INCREASE COOPERATIVE EFFORTS TO MAINTAIN ecological features or processes on public, private, and tribal lands.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE conservation activities that encourage and support sustainable land management practices (example: rest and rotation schedules).

TIER ONE COMMUNITY TYPES

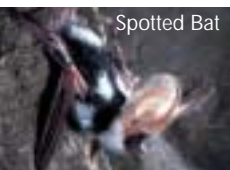
Grassland Complexes	35%
Mixed Shrub/Grass Associations	17%
Riparian & Wetland	6%
Sagebrush & Salt Flats	5%

CONSERVATION	
CONCERNS	STRATEGIES
LOSS OF HABITAT AS A RESULT OF CONVERSION of native habitat to agriculture.	
FRAGMENTATION OF HABITAT DUE TO FOSSIL fuel exploration and development activities.	
RANGE OR FOREST MANAGEMENT PRACTICES.	
DISRUPTION OF NATURAL DISTURBANCE processes, especially fire.	



CONSERVATION	
CONCERNS	STRATEGIES
	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT COOPERATIVE PROGRAMS/ACTIVITIES that encourage and support private land use stewardship.
	EDUCATE ON AND RESEARCH FOSSIL FUEL development and its impacts on natural landscape; STUDY IMPACTS OF ROAD DEVELOPMENT AND retention pond construction as a result of coal bed methane development in both Montana and Wyoming.
	SUPPORT COOPERATIVE ACTIVITIES THAT encourage and support sustainable land management practices (example: rest and rotation schedules).
	WORK WITH OTHER AGENCIES, TRIBES AND private organizations to restore the natural disturbance processes

TIER ONE SPECIES



- AMPHIBIANS**  
Northern Leopard Frog
- REPTILES**  
Snapping Turtle  
Spiny Softshell  
Western Hog-nosed Snake  
Milksnake
- BIRDS**  
Common Loon  
Trumpeter Swan  
Bald Eagle  
Greater Sage-Grouse  
Whooping Crane  
Long-billed Curlew  
Black Tern  
Burrowing Owl
- MAMMALS**  
Spotted Bat  
Townsend's Big-eared Bat  
Black-tailed Prairie Dog  
Meadow Jumping Mouse  
Black-footed Ferret  
American Bison

Terrestrial Focus Areas

Aquatic Focus Areas

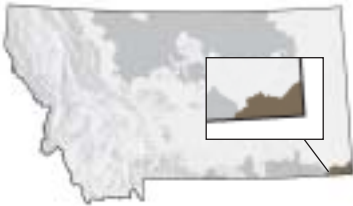
Shale Scablands

Middle Missouri River & Tributaries

417,176 acres

540 river miles

This very dry area is covered mostly by sagebrush grassland, intersected by woody draws. The plant species that make up the woody draws are mostly green ash, buffaloberry, chokecherry and some juniper. This drought-



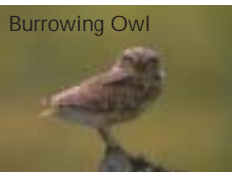
impacted area has been called the “big empty,” but in recent years has garnered much interest due to the discovery of coal bed natural gas.

Once the Missouri River reaches the confluence with Hardy Creek, it becomes wide and slow but turns into whitewater as it flows over the remaining falls at Great Falls. At Great Falls, the middle Missouri River picks up increased volume from its confluence with the Sun River. From here



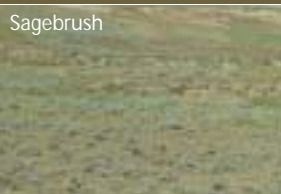
down stream for more than 200 miles to Fort Peck Reservoir, it is the longest free-flowing section of the entire Missouri River. It flows through cottonwood forests and strikingly-white rock cliffs and bluffs. At the eastern limit of this focus area is Fort Peck Dam, the fourth largest freshwater reservoir in the world.

TIER ONE SPECIES



- AMPHIBIANS**  
Northern Leopard Frog
- REPTILES**  
Snapping Turtle  
Spiny Softshell  
Western Hog-nosed Snake  
Milksnake
- BIRDS**  
Common Loon  
Bald Eagle  
Greater Sage-Grouse  
Whooping Crane  
Mountain Plover  
Long-billed Curlew  
Black Tern  
Burrowing Owl
- MAMMALS**  
Townsend's Big-eared Bat  
Black-tailed Prairie Dog  
Meadow Jumping Mouse  
Black-footed Ferret

TIER ONE COMMUNITY TYPES



- Sagebrush & Salt Flats 30%
- Grassland Complexes 13%
- Salt-desert Shrub/Dry Salt Flats 9%
- Riparian & Wetland 9%
- Mixed Shrub/Grass Associations 5%

CONSERVATION	
CONCERNS	STRATEGIES
LOSS OF HABITAT DUE TO CONVERSION OF native prairie to crops.	DEVELOP POLICY-BASED APPROACHES THAT ENCOURAGE the conservation of natural communities, rather than support their conversion; SUPPORT PUBLIC AND PRIVATE CONSERVATION programs/activities that encourage and support private land use stewardship;
DRAINAGE OF NATURAL WETLANDS.	PARTICIPATE IN GOVERNMENT AND PRIVATE conservation partnerships to reduce the loss of wetland habitat and restore lost wetlands.
INVASIVE OR EXOTIC PLANT SPECIES.	DEVELOP COOPERATIVE EFFORTS TO REDUCE the abundance of exotic plant species.
DISRUPTION OF NATURAL DISTURBANCE processes, especially fire.	WORK WITH OTHER AGENCIES, TRIBES AND private organizations to restore the natural disturbance processes.
RANGE OR FOREST MANAGEMENT PRACTICES.	SUPPORT GOVERNMENT AND PRIVATE CONSERVATION activities that encourage and support sustainable land management practices (example: rest and rotation schedules).

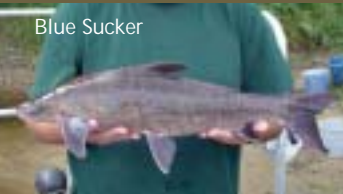
TIER ONE SPECIES



- Pallid Sturgeon
- Paddlefish
- Shortnose Gar

FISH

- Sturgeon Chub
- Sicklefin Chub
- Blue Sucker
- Burbot
- Sauger



CONSERVATION:	CONCERNS	STRATEGIES
CULVERTS, DAMS, IRRIGATION DIVERSIONS, AND OTHER INSTREAM BARRIERS THAT fully or partially impede fish movement and reduce connectivity of habitat.		REMOVE OR MODIFY BARRIERS IN A MANNER THAT RESTORES FISH PASSAGE TO ensure full migratory movement
MODIFICATION AND DEGRADATION OF STREAM CHANNELS CAUSED BY VARIOUS construction or land management practices.		RESTORE STREAM CHANNELS OR STREAMBANKS TO A CONDITION THAT SIMULATES their natural form and function
RIPARIAN VEGETATION EFFECTED BY RANGE AND FOREST MANAGEMENT PRACTICES and streamside residential development (such activities destabilize streambanks, increase sediment inputs, reduced shading, and remove woody debris).		SUPPORT GOVERNMENT AND PRIVATE CONSERVATION ACTIVITIES THAT ENCOURAGE and support sustainable land management practices in riparian areas; MODIFY RIPARIAN MANAGEMENT PRACTICES SUCH THAT RIPARIAN VEGETATION IS allowed to recover; DEVELOP STATEWIDE RIPARIAN BEST MANAGEMENT PRINCIPLES.
ENTRAINMENT OF JUVENILE AND ADULT FISHES BY IRRIGATION DIVERSIONS OR other water intakes.		SCREEN OR MODIFY IRRIGATION DIVERSIONS OR OTHER WATER INTAKES IN A manner that prevents entrainment of fishes.
ALTERATIONS OF THE QUANTITY OR TIMING OF STREAM FLOWS, CAUSING dewatering or unnatural flow fluctuations that diminish the quantity or quality of essential habitats.		IMPLEMENT VARIOUS WATER CONSERVATION OR FLOW MANAGEMENT PRACTICES THAT restore essential habitats and simulate the natural hydrograph; PROTECT INSTREAM FLOW RESERVATIONS.
WATER CHEMISTRY PROBLEMS THAT ARISE DUE TO MUNICIPAL DISCHARGE, irrigation return water, and other sources.		WORK WITH MUNICIPAL GOVERNMENT AND PRIVATE LANDOWNERS TO REDUCE point source pollutants.
UNNATURAL HYDROGRAPH AND WATER TEMPERATURES ASSOCIATED WITH THE presence and operations of large dams.		WORK WITH APPROPRIATE AUTHORITIES TO RESTORE HYDROGRAPH THAT MIMICS the natural regime.
NON-NATIVE FISH SPECIES.		SUPPORT ACTIVITIES TO PROMOTE NATURAL HABITATS THAT SUPPORT NATIVE SPECIES.

MONTANA'S COMMUNITY TYPES  
OF GREATEST CONSERVATION NEED